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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/640,850	08/13/2003	Yasunori Ito	MURTP083D1	9131
22434	7590	12/06/2005	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			WILKINS III, HARRY D	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 12/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/640,850

Applicant(s)

ITO ET AL.

Examiner

Harry D. Wilkins, III

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/392,466.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/27/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Double Patenting***

1. Applicant is advised that should claim 16 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Drawings***

2. The formal drawings submitted in the parent application (09/392,466) should be submitted in this application to provide the drawings in the proper format as indicated in the parent application.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowman (US 5,115,221) in view of Matsuoka et al (US 3,872,582).

Cowman teaches the invention substantially as claimed. Cowman teaches (see abstract, figures and col. 6, line 4 to col. 15, line 15) a method of making a varistor (variable resistor, which genus includes a thermistor) including stacking a specified

number of ceramic green sheets, cutting the stacked ceramic green sheets to obtain an element, applying a ceramic material having a higher specified resistance than the ceramic green sheets entirely over the outer surface except the end parts, baking the element, and depositing conductive terminal layers on the opposing end parts.

Thus, Cowman fails to teach that the conductive terminal layers are deposited by an electrolytic plating process. In fact, Cowman is completely silent as to how the coating is formed (see col. 9, lines 39-47). Cowman assumes that one of ordinary skill in the art was well aware of how to apply the terminals.

Matsuoka et al teach (see abstract, figure and col. 5, lines 4-11) conventional methods for applying a conductive terminal on a sintered ceramic resistor element, similar to the one disclosed by Cowman. Matsuoka et al teach that the known methods included electrolytic plating.

Therefore, it would have been within the knowledge and skill of one of ordinary skill in the art to have used the conventional electrolytic plating method as disclosed by Matsuoka et al for applying the conductive terminal of Cowman because the electrolytic plating was known to be capable of forming the conductive terminals.

Regarding claim 14, Cowman teaches (see col. 7, lines 31-64) that the ceramic layer and the thermistor element can be made of the same principal component, of which

Regarding claim 15, it would have been obvious to have made the variable resistor element to have any desired specific resistance, such as lower than 200  $\Omega$ -cm, in order to make the resistor suitable for a desired end use.

5. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowman (US 5,115,221) in view of Matsuoka et al (US 3,872,582) as applied to claims 13-15 above, and further in view of Mahoney (US 5,257,003).

The teachings of Cowman and Matsuoka et al are described above.

However, Cowman and Matsuoka et al teach forming the thermistor from a zinc oxide material, not a mixed oxide material as claimed.

Mahoney teaches (see abstract and col. 3, lines 12-29) that thermistors could be made from various compositions, including mixtures of Mn, Ni, Co, Fe, Cu and Al oxides

Therefore, it would have been obvious to one of ordinary skill in the art to have made the thermistor of Cowman and Matsuoka et al from other ceramic materials, such as those disclosed by Mahoney, in order to optimize the final properties of the thermistor for its desired end use.

6. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowman (US 5,115,221) in view of Matsuoka et al (US 3,872,582) as applied to claims 13 above, and further in view of Julke et al (US 4,559,167).

The teachings of Cowman and Matsuoka et al are described above.

However, Cowman does not teach forming a high resistance layer after the green sheets having been baked.

Julke et al teach (see abstract, figures and col. 2, lines 38-65) a method of making a varistor including using an organic resin, such as an acrylate resin, as the protective high resistance coating on the ceramic thermistor element.

Therefore, it would have been obvious to one of ordinary skill in the art to have used the acrylate resin as taught by Julke et al as the protective outer layer of the varistor of Cowman because the organic resin provided improved oxygen barrier properties, thereby enhancing performance of the varistor.

Julke et al teach (see col. 2, line 38-48) that the organic coating is formed after the oxide varistor material has been sintered (baked). Therefore, it would have been obvious to one of ordinary skill in the art to have applied the organic high-resistance layer after the baking step of Cowman.

#### ***Other Comments***

7. No double patenting rejection (statutory or obvious-type) is made over the claims of US 6,588,094 because the claims of that patent do not include a separate step of coating the green layers with a ceramic material. Thus, the present claims are not obvious over the claims of the '094 patent.


#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Harry D Wilkins, III  
Examiner  
Art Unit 1742

hdw